REMARKS

Claims 1-12 are currently pending in this application. Claims 1, 3, 4 and 6 have been amended to clarify the invention. For the reasons set forth below, Applicant believes that the rejections should be withdrawn and that the Claims 1-12 are in condition for allowance.

REJECTION OF CLAIMS 1-12 UNDER 35 U.S.C. 103(a)

The Examiner rejected Claims 1-3 and 7-9 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,600,402 to LaFleur *et al.* ("LaFleur") in view of U.S. Patent No. 4,613,841 to Roberts *et al.* ("Roberts") and further in view of U.S. Pub. No. 2002/0190831 to Hess *et al.* ("Hess"). The Examiner rejected Claims 4-6 and 10-12 under 35 U.S.C. 103(a) as being unpatentable over LaFleur in view of Reissued U.S. Patent No. 31,840 to Harris *et al.* ("Harris"), in view of Roberts and further in view of Hess.

The Examiner has not established a prima facie case of obviousness. To establish a prima facie case of obviousness, the Examiner must: (1) identify the reason why a person of ordinary skill in the art would have combined the teachings of the references; and (2) show that the references teach or suggest all of the claimed limitations.

CLAIMS 1 and 4

Claims 1 and 4 have been amended to clarify the claimed invention. With respect to Claims 1 and 4, the cited references fail to disclose or suggest all of the features of the claimed invention. As acknowledged by the Examiner in the rejections of Claims 1 and 4 Roberts, LaFleur and Harris do not disclose or suggest a plurality of auxiliary cores as recited by Claims 1 and 4. To overcome this lack of teaching in Roberts, LaFleur and Harris the Examiner relies on Hess and alleges that Hess teaches "a plurality of auxiliary cores (Fig. 1 [KB]), made of magnetic material, with a given distance in a circumferential direction ([0023]-[0024])", thus equating the core regions KB of Hess with the auxiliary cores of the claimed invention.

Claims 1 and 4 recite switching power supplies that include a first series circuit, a transformer, a second series circuit, a smoothing circuit, and a control circuit, wherein the transformer includes a main core, made of a magnetic material and a "plurality of auxiliary cores ... wherein the plurality of auxiliary cores are provided on the transformer to *leak a part of a magnetic flux* by the main core." [*Emphasis added*; *see also* 0049 and 0051].

Hess discloses core regions KB with a completely different role and effect from the auxiliary cores of the present invention. As illustrated in Figure 1 of Hess the partial cores K1 and K2 are part of the main (soft-magnetic) core K, that is, the soft-magnetic core K consist of the partial cores K1, K2 and the core regions KB. In Hess the core region KB does not leak the magnetic flux generated by the soft-magnetic core K, but instead establishes a proportional relationship between a current flowing from the current conductor SL to an inductance L. [*See* Figs. 1 and 4]. Thus the core region KB passes a magnetic flux that interlinks the current conductor SL and the measurement winding MV, and therefore transmits energy from the current conductor SL to the measurement winding MV.

According to an embodiment of the present invention, the auxiliary cores 24a and 24b are provided on the transformer in order to leak a part of the magnetic flux generated by the main core 21. [*See* Figs. 2B and 2C]. The auxiliary cores 24a and 24b are different from the main core 21 because the auxiliary cores 24a and 24b are sandwiched between the primary and secondary windings 5a and 5b, and thus are independent from them in construction. [*See* Fig. 2C]. The auxiliary cores 24a and 24b do not pass any magnetic flux that interlinks the primary and secondary winding 5a and 5b. Therefore, it is apparent that the auxiliary cores 24a and 24b do not play a role in transmitting energy from the primary winding 5a to the secondary winding 5b.

As described in the specification adjusting the number of auxiliary cores and a length L allows regulation of a leakage inductance value for providing a desired reactor (inductor). [*See e.g.*, 0049, 0051, 0053, 0069, etc.]. The core regions KB taught by Hess are quite

different and do not function as the auxiliary cores of the claimed invention. Hess does not disclose or suggest "auxiliary cores" as recited by Claims 1 and 4.

Therefore, the Examiner has failed to show that LaFleur in view of Roberts and in further view of Hess teaches or suggest all the elements of Claim 1, and that LaFleur in view of Harris, in view of Roberts and in further view of Hess teaches or suggest all the elements of Claim 4. Claims 1 and 4 are patentable over LaFleur, Harris, Roberts and Hess. Thus the rejections should be withdrawn.

CLAIMS 2, 7 and 8

Claims 2, 7 and 8 depend directly or indirectly from independent Claim 1. Accordingly, for at least the same reasons discussed above, Claims 2, 7 and 8 are patentable over LaFleur in view of Roberts and in further view of Hess.

CLAIMS 5, 10 and 11

Claims 5, 10 and 11 depend directly or indirectly from independent Claim 4. Accordingly, for at least the same reasons discussed above, Claims 5, 10 and 11 are patentable over LaFleur in view of Harris, in further view of Roberts and in further view of Hess.

CLAIMS 3 and 6

Claims 3 and 6 have been amended to clarify the claimed invention. With respect to Claims 3 and 6, the cited references fail to disclose or suggest all of the features of the claimed invention. As acknowledged by the Examiner in the rejections of Claims 3 and 6 Roberts, LaFleur and Harris do not disclose or suggest the insulating magnetic material as recited by Claims 3 and 6. To overcome this lack of teaching in Roberts, LaFleur and Harris the Examiner relies on Hess and alleges that Hess teaches "a plurality of auxiliary cores (Fig. 1 [KB]), made of magnetic material, with a given distance in a circumferential direction ([0023]-[0024])", thus equating the core regions KB of Hess with the insulating magnetic material (*i.e.*, the outer bobbin is made of the insulating magnetic material) of the claimed invention.

Claims 3 and 6 recite switching power supplies that include a first series circuit, a transformer, a second series circuit, a smoothing circuit, and a control circuit, wherein the transformer includes a main core, made of a magnetic material and an "outer bobbin being made of an insulating magnetic material ... wherein the insulating magnetic material is provided on the transformer to *leak a part of a magnetic flux* generated by the main core. plurality of auxiliary cores are provided on the transformer to *leak a part of a magnetic flux* by the main core." [*Emphasis added*; *see also* 0057 and 0058].

The insulating magnetic material of Claims 3 and 6 serves a similar purpose as the plurality of auxiliary cores of Claims 1 and 4. Accordingly Claims 3 and 6 are patentable over LaFleur, Roberts, Harris and Hess for at least the same reasons discussed above.

CLAIM 9

Claim 9 depends directly from independent Claim 3. Accordingly, for at least the same reasons discussed above, Claims 9 is patentable over LaFleur in view of Roberts and in further view of Hess.

CLAIM 12

Claim 12 depends directly from independent Claim 6. Accordingly, for at least the same reasons discussed above, Claim 12 is patentable over LaFleur in view of Harris, in further view of Roberts and in further view of Hess.

CONCLUSION

The foregoing is submitted as a complete response to the Office Action identified above. Applicant believes this application is now in condition for allowance and solicits a notice to that effect. If there are any issues that can be addressed via telephone, the Examiner is asked to contact the undersigned at 404.685.6799. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 11-0855.

Respectfully submitted,

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